

### **Remarks**

Claims 1, 9, 17, and 25 have been amended. Following the above amendments, claims 1-3, 5-12, 14-19, 21-28, and 30-32 are pending in this application. The examiner has rejected claims 1, 3, 6-12, 15-17, 19, 22-28, 31, and 32 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,774,647 to Raynham et al in view of U.S. Patent No. 5,588,112 to Dearth et al. The examiner has also rejected claims 2, 5, 14, 18, 21, and 30 under 35 U.S.C. § 103(a) as being obvious over Raynham in view of Dearth and further in view of Brisse et al. (WO 99/05599). Applicant respectfully traverses the Examiner's rejections.

#### **A. Independent Claims 1, 9, 17 and 25**

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

The combination of Raynham and Dearth fails to teach or suggest all the claim limitations of independent claims 1, 9, 17, and 25. Raynham, taken alone, fails to teach or suggest the claimed element of an error log comprising information identifying the cause of the occurrence of an error, where one or more BIOS routines are able to perform the steps of creating and storing this log. Dearth, taken alone, also fails to teach or suggest one or more BIOS routines able to perform the steps of creating a log including information about the cause of an error and storing the log in the non-volatile memory of a memory module. Thus, the combination of Raynham and Dearth also fails to teach this element.

As demonstrated in Table II in the Specification, the error log created by an embodiment of the present invention records whether the error was a “read error, write error, refresh error, etc.”. The error log thus provides information about the **cause** of occurrence of the particular logged error, *i.e.* whether the error resulted from a write operation, a read operation, etc. Additionally, paragraph [0019] of the Specification discusses how the means for generating and storing this log can be respective BIOS routines programmed for the respective central processing unit. Accordingly, claims 1 and 17 of the present application recite a method that includes the creation of a log including information that identifies the “**cause** of said error,” and a BIOS routine capable of creating and storing this log. Similarly, claims 9 and 25 of the present application recite a computer system comprising a means for generating a log that “includes information identifying the **cause** of said error,” and a BIOS routine as a means for creating and storing this log. Thus, claims 1, 9, 17, and 25, as amended, require that the entries in the claimed error log comprise information about the **cause** of occurrence of each recorded error and that a BIOS routine be capable of creating and storing this error log.

The Examiner has stated that Raynham fails to explicitly state wherein the log includes information identifying the cause of said error. (Office Action, p.2) Thus, Raynham, taken alone, does not teach or suggest the claimed element of an error log comprising information identifying the cause of the occurrence of an error, where one or more BIOS routines are able to perform the steps of creating and storing this log. Dearth does not remedy this deficiency. The cited portion of Dearth at column 15, lines 9-19 states, “Single bit errors and multiple bit errors during memory reads and memory writes are indicated by assertions of signals SINGLE BIT ERROR and DOUBLE BIT ERROR, and the error is logged in error register 17 on the CPU unit.” First, Dearth does not teach or suggest creating a log including information about

the **cause** of an error. Denoting whether an error was a single bit error or a double bit error by way of asserting a corresponding signal is not the same as logging information about the **cause** of the error; at best, it suggests denoting whether the resulting error affected one or more bits of the data. Dearth fails to teach or suggest logging information regarding the **cause** (such as a read or write operation) of the error, and at best teaches logging an error itself. Second, Dearth does not teach or suggest storing the log in the non-volatile memory of a **memory module**. Dearth states that the error is logged in error register 17 on the CPU unit. The error register on the CPU unit is not the same as a memory module located in a slot in a memory system coupled to a central processing unit, as required by the claims of the present invention. Dearth does mention storing ECC error code bits and data bits into memory SIMMs, but ECC error code bits and the data bits are not information regarding the **cause** of an error, as required by the claims. Finally, Dearth does not teach or suggest a BIOS performing the steps of creating and storing an error log. Dearth does not mention a Basic Input/Output System (BIOS) at all. Dearth does not remedy the deficiencies of Raynham. Thus, Raynham and Dearth, whether taken alone or in combination, do not teach or suggest creating a log including information about the **cause** of an error and storing this log in the non-volatile memory of a memory module, where one or more BIOS routines are able to perform the steps of creating and storing this log.

A prima facie case of obviousness has not been established because the combination of Raynham and Dearth does not teach or suggest all of the claimed elements of independent claims 1, 9, 17, and 25. Thus, the rejection of claims 1, 9, 17, and 25 under 35 U.S.C. 103(a) should be withdrawn.

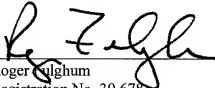
**B. The Rejection of Dependent Claims 2, 3, 5-8, 10-12, 14-16, 18, 19, 21-24, 26-28 and 30-32**

The rejection of dependent claims 2, 3, 5-8, 10-12, 14-16, 18, 19, 21-24, 26-28 and 30-32 will not be discussed individually herein, as each of these claims depends, either directly or indirectly, from an otherwise allowable base claim.

**Conclusion**

Applicant respectfully submits that the pending claims 1-3, 5-12, 14-19, 21-28, and 30-32 of the present invention, as amended, are allowable. Applicant respectfully requests that the rejection of the pending claims be withdrawn and that these claims be passed to issuance.

Respectfully submitted,

  
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